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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/465,056	12/16/1999	ROGER E. WEISS	PARI/981/US	8410

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EXAMINER

NGUYEN, TRUC T

ART UNIT PAPER NUMBER

2833

DATE MAILED: 11/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/465,056

Applicant(s)

WEISS, ROGER E.

Examiner

Truc T. T. Nguyen

Art Unit

2833

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-59 is/are pending in the application.
- 4a) Of the above claim(s) 4, 8, 13-17, 20-22 and 25-59 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 10-12, 18, 19, 23 and 24 is/are rejected.
- 7) ☒ Claim(s) 2-3, 5-7, 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/26/2002 has been entered.

Drawings

2. Figure 1B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2833

4. Claims 1, 12, 18, and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beaman et al. (US 5,371,654) in view of Lambert et al. (US 4,820,376).

Regarding claim 1, Beaman et al. disclose a device for electrically interconnecting two or more components, comprising:

a matrix (8) having one or more surfaces (10, 22);

a plurality of electrically conductive pathways (20) through the matrix;

a plurality of electrically conductive contact pads (18) integral with the matrix and in electrical contact with the plurality of conductive pathways;

wherein at least a portion of one or more of the pads is extended outward from an outer surface (10) of the matrix (the extended distance is about the same with a thickness of the member 12, see Figure 2).

Beaman et al. does not disclose the matrix is an elastomeric matrix or the conductive pathways comprising a plurality of particles.

Lambert et al. teach an elastomeric matrix (11) having a plurality of conductive pathways, each of the conductive pathways comprising a plurality of particles (10).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an elastomeric matrix with plurality of particles in each conductive pathway into Beaman et al.'s interconnecting device, as taught by Lambert et al. for flexibility contacting to an electronic component.

Regarding claim 12, in the modified interconnecting device of Beaman et al. in view of Lambert et al., Lambert et al. disclose one or more of said pathways comprising a plurality of particles (10) aligned to form a column having at least one end, wherein one or more of said pads

Art Unit: 2833

are in contact with at least one of said ends of one or more of said columns of particles (Figure 2).

Regarding claim 18, in the modified interconnecting device of Beaman et al. in view of Lambert et al., Lambert et al. disclose one or more pathways comprises a plurality of electrically conductive particles aligned in a column having at least one end particle coated with a metal (17).

Regarding claim 23, in the modified interconnecting device of Beaman et al. in view of Lambert et al., Beaman et al. substantially disclose the claimed invention except for said pathways comprising a plurality of conducting particles aligned in one or more columns having at least one end particle.

Lambert et al. further disclose one or more of said pathways comprising a plurality of conducting particles aligned in one or more columns having at least one end particle (Figures 1-3).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the conductive pathway of Beaman et al. by a plurality particles aligned in one column, as taught by Lambert et al. for providing flexible contact under compression of the matrix.

Regarding claim 24, in the modified interconnecting device of Beaman et al. in view of Lambert et al., Beaman et al. disclose the outer surface of the matrix comprise a first surface (10) adapted to face one component (12) and a second surface (22) adapted to face a second component (24).

Art Unit: 2833

5. Claims 10-11 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beaman et al. (US 5,371,654) in view of Lambert et al. (US 4,820,376) and Applicant's Admitted Prior Art (disclosed in the Background of the Invention section).

Regarding claim 10, the modified interconnecting device of Beaman et al. in view of Lambert et al. substantially disclose claimed invention except the pathways being anisotropic and comprise up to about 25% magnetic particles.

Applicant's APA teaches the conductive pathways being anisotropic.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the conductive pathway of Beaman et al. by a plurality of anisotropic particles, as taught by Applicant's APA for providing compressibility in different direction of the particles.

It would have been obvious to one having ordinary skill in the art at the time the invention was to made to provide the pathways comprise up to about 25% magnetic particles , since it has been held that where the general conditions of a claim a are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claim 11, in the modified interconnecting device of Beaman et al. in view of Lambert et al. and Applicant's APA, Lambert et al. disclose the plurality of the magnetic particle are aligned to formed one or more array of electrically isolated column having at least one end, wherein one or more of said pads is in contact with an end of one or more of said columns of particles (see Figure 1).

Regarding claim 19, the modified interconnecting device of Beaman et al. in view of Lambert et al. substantially disclose the claimed invention except the matrix comprises one or more elastomers which retains about 90% or more of its modulus of compression over a temperature range of between about -50 degree Celsius to 200 degree Celsius.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide about 90% or more of elastomer into the Jin et al's. Since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Allowable Subject Matter

6. Claims 2-3, 5-7 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is an examiner's statement of reasons for allowance:

The prior art of record fails to teach one or more means for providing a flow space into which at least a portion of the matrix may flow under compression.

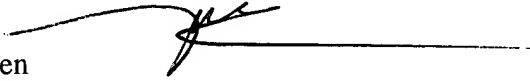
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 2833

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Truc T. T. Nguyen whose telephone number is 703-306-4004. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula Bradley can be reached on 703-308-2319. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.


T. Nguyen
November 4, 2002